result by depressing the roof of the furnace. The serious objections to this poor construction arose from its tending to strangle the furnace during the heat and from the extremely short life of the roof. Later experience showed that the flame might be jetted into this pocket by the direction of the ports and the velocity of the gas and air. In European furnaces these velocities range between 12 and 18 m (40 to 60 ft) per second, while in American furnaces the velocity is as high as 50 m per second.

TABLE 5

OPEN-HEARTH FURNACES

Reference Number, Ton	Square Feet, Port Areas		Reference Number, Ton	Square Feet, Port Areas	
	Gas	Air		Gas	Air
10-01-A	2.43	10.12	50-04-A	10.50	18.0
			50-05-A	7.66	19.2
15-03-B	1.07	4.68	50-07-A	5.75	13.8
			50-09-A	7.50	13.7
20-03-A	2.80	3.50	50-10-A	6.60	13.1
			50-11-A	4.92	14.53
25-04-A	3.25	9.00	50-12-A	11.59	17.72
			50-13-A	12.50	18.0
30-04-A	4.75	13.75	50-14-A	6.80	15.38
30-05-A	3.70	14.60	50-15-A	9.85	16.14
			50-16-A	5.62	17.80
35-01-A	,	6.40	50-16a-A	7.00	20.00
35-Ola-A	3.75	5.98	50-17-A	10.50	12.33
			50-18-A	8.00	16.42
40-05-A	15.70	21.00	50-19-A	7.40	13.30
40-06-A	3.5	7.00		<	
40-04-A	8.00	14.25	60-05-A	6.75	29.31
			60-06-A	8.00	25.74
			60-13-A	7.74	25.37

A number of different arrangements of the ports of the Siemens furnace have been devised and used with more or less success.

The early Siemens furnaces were designed for the use of

producer gas, which required preheating. Later these furnaces were used with various manufactured and natural gases and fuel oils, while